

**DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection**

P069448164

FACILITY: Cintas Corporation	SRN / ID: P0694
LOCATION: 31850 Sherman Drive, MADISON HTS	DISTRICT: Southeast Michigan
CITY: MADISON HTS	COUNTY: OAKLAND
CONTACT: Kevin Drzewiecki , Production Manager	ACTIVITY DATE: 03/08/2019
STAFF: Kerry Kelly	COMPLIANCE STATUS: Compliance
SUBJECT: Determine facility's compliance with requirements of the Federal Clean Air Act; Article II, Air Pollution Control, Part 55 of Act 451 of 1994; and Permit to Install (PTI) number 84-18.	
RESOLVED COMPLAINTS:	

On March 8, 2019, I (Kerry Kelly, MDEQ-AQD), conducted a targeted inspection at Cintas Corporation located at 31850 Sherman, Madison Heights, Michigan. The purpose of the inspection was to verify facility's compliance with requirements of the Federal Clean Air Act; Article II, Air Pollution Control, Part 55 of Act 451 of 1994; and Permit to Install (PTI) number 84-18.

I arrived at Cintas at about 8:00 AM. At the facility, I met Mr. Pat Logan, Maintenance Supervisor, and Mr. Kevin Drzewiecki, Plant Manager. I introduced myself to Mr. Logan and Mr. Drzewiecki, stated the purpose of the inspection, and showed them my credentials. Mr. Logan and Mr. Drzewiecki answered questions, provided records, and showed me around the facility. Ms. Liz Carson, Arcadis, provided supporting information regarding emissions calculations following the inspection.

FACILITY INFORMATION

The Cintas facility in Madison Heights is an industrial laundering facility located in southeastern Oakland County. The properties immediately surrounding the facility are commercial/industrial. The closest residential subdivision is approximately three-tenths of a mile south-southwest of Cintas. Red Oaks Waterpark, Red Oaks Dog Park, and Red Run Drain (part of the Clinton River Watershed) are located within 0.5 miles of Cintas.

At Cintas, washing machines and natural gas-fired dryers are used to launder textiles including uniforms, floor mats, mops, bar towels, and shop towels. Shop towels are re-usable cloth towels used to clean mechanical equipment, parts, and devices. Soiled shop towels can contain VOC solvents. Though water-based laundering products and equipment are used at this facility, hazardous air pollutants (HAPs) and volatile organic compounds (VOCs) are emitted when dirty shop towels are laundered. In addition, two of the detergents/softeners used at Cintas, Motion and Pinnacle Softener G, contain VOCs. The VOCs in Motion and Pinnacle Softener G include dipropylene glycol monomethyl ether, isopropyl alcohol, and ethanol. A 3.348 MMBtu boiler, manufactured in 2012, is used to produce steam for a laundry steam tunnel, pressing, and hot water for washing machines.

COMPLIANCE EVALUATION

The requirement of Rule 201(1) to obtain a permit to install does not appear to apply to washers, dryers, boiler, and wastewater treatment equipment/processes at Cintas. In February 2018, Cintas submitted actual emission calculations and potential to emit calculations to demonstrate the washers, dryers, boiler, and wastewater treatment equipment/processes were not excluded from exemption as stated in Rule 278. The significance levels and the facility-wide potential emissions submitted for the Madison Heights facility can be found in the tables below:

Air Contaminant	Significance Level	Madison Heights Actual Emissions
Carbon Monoxide (CO)	100	5.0
Nitrogen Oxides (NOx)	40	6.0

Sulfur Dioxide (SO ₂)	40	0.0
Particulate Matter (PM)	25	5.6
PM-10	15	1.4
PM-2.5	10	1.1
VOCs	40	3.77
Lead	0.6	<0.01
Fluorides	3	n/a
Sulfuric Acid Mist	7	n/a
Hydrogen Sulfide	10	n/a

Air Contaminant	Major Source Threshold	Potential Emissions Madison Heights
Carbon Monoxide (CO)	100	5.0
Nitrogen Oxides (NO _x)	100	6.0
Sulfur Dioxide (SO ₂)	100	0.0
Particulate Matter (PM)	100	14.6
PM-10	100	9.9
PM-2.5	100	9.0
VOCs	100	61.7
Total HAP	25	11.4
Maximum Individual HAP	10	4.7

Based on the calculations provided by Cintas, it appears the washers, dryers, boiler, and wastewater treatment equipment/processes are not excluded from exemption as stated in Rule 278. The exemptions and other regulatory information for the washers, dryers, boiler, and wastewater treatment is discussed below.

WASHING MACHINES

While inspecting Cintas in Madison Heights, I observed six washers with a nameplate capacity of 450 lbs, one with a nameplate capacity of 250 lbs, and one with a nameplate capacity of 150 lbs. The cleaning products I observed at the facility were Structure, Express, Motion, Secure, Pinnacle, Enlite, Secure Sour, and Hypochlorite (bleach). The safety data sheets (SDS) for these products were provided by Cintas. The first two pages which include the composition/information on ingredients are attached (Attachment 1).

Cintas submitted records indicating all eight washing machines are exempt from the requirement to obtain a permit to install per Rule 291. Rule 291 potential to emit (PTE) calculations for the washing machines were also provided by Cintas (Attachment 2). These records state Cintas is using the VOC emission factors from USEPA approved stack testing conducted at a similar facility in Rhode Island. The potential emissions for each washing machine were calculated based on the highest capacity washing machine (563 lbs soiled shop towels) and 8760 hours per year. Based on the information in the records, each washer appears to meet the potential to emit limits in Rule 291. The calculated potential emissions and Rule 291 limits are summarized in the table below:

		Madison Heights
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	Limit (tpy)	Potential Emissions (tpy)
VOC TPY (as defined in R336.1122)	5	0.69
291 (2)(a) Screening Level $\geq 0.04 < 2$ ug/m ³	0.12	0.02
291 (2)(b) Screening Level ≥ 0.005	0.06	--
291 (2)(c) Screening Level < 0.005 ug/m ³	0.006	--
Total Toxic Air Contaminants not Listed in Table 23 with any Screening Level	5	0.02
Total Air Contaminants not Listed in Table 23 that are Non-Carcinogenic and do not have a Screening Level	6	--

DRYERS

I observed four dryers at Cintas Madison Heights. Three dryers had a nameplate capacity of 462 lbs, I could not see the nameplate capacity of the fourth dryer. Cintas submitted records indicating all four dryers are exempt from the requirement to obtain a permit to install per Rule 290. VOC emissions calculations, required by Rule 290, for the dryers were also provided by Cintas for June 2018 through February 2019 (Attachment 3). These records indicate the dryer emissions are with the limits established in Rule 290. The calculated VOC emissions and Rule 290 limits are summarized in the table below:

	LARGE DRYER EMISSIONS (per dryer) (LBS/MO)									
	Jun 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	
<i>Soiled Shop Towel Total VOC's</i>	38.5	38.8	43.1	32.1	41.0	34.9	34.0	41.3	35.8	
<i>"Other Textile" Total VOC's</i>	100	95.0	104	84.8	105	98.8	97.5	108	101	
<i>Non-Carcinogenic Materials in 122(f)</i>	0.06	0.06	0.06	0.04	0.06	0.05	0.05	0.06	0.05	
<i>ITSL ≥ 0.04 ug/m³ < 2.0 ug/m³ (Limit: 20 lbs/mo)</i>	0.17	0.17	0.19	0.14	0.18	0.15	0.15	0.18	0.16	
<i>IRSL > 0.04 ug/m³ (Limit: 20 lbs/mo)</i>	0.85	0.86	0.96	0.71	0.91	0.77	0.75	0.92	0.79	
<i>Total (Limit: 1,000 lbs/mo)</i>	140	135	148	118	147	135	132	151	137	

	SMALL DRYER (PONY) EMISSIONS (per dryer) (LBS/MO)									
	Jun 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	
<i>Soiled Shop Towel Total VOC's</i>	12.9	13.0	14.5	10.8	13.8	11.7	11.4	13.9	12.0	
<i>"Other Textile" Total VOC's</i>	33.8	31.9	34.8	28.5	35.2	33.2	32.8	36.3	33.8	
<i>Non-Carcinogenic Materials in 122(f)</i>	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	
<i>ITSL ≥ 0.04 ug/m³ < 2.0 ug/m³</i>	0.06	0.06	0.06	0.05	0.06	0.05	0.05	0.06	0.05	

<i>(Limit: 20 lbs/mo)</i>									
<i>IRSL >0.04 ug/m3 (Limit: 20 lbs/mo)</i>	0.29	0.29	0.32	0.24	0.31	0.26	0.25	0.31	0.27
Total (Limit: 1,000 lbs/mo)	47.0	45.3	49.7	39.6	49.4	45.24	44.5	50.6	46.2

BOILER

I observed one Cleaver Brooks boiler with a maximum heat input rating of 3.35 MMBtu/hour at Cintas. This boiler appears to be exempt from the requirement in Rule 201 to be permitted per Rule 282(2)(b)(i) because it is fuel burning equipment that burns sweet natural gas and has a maximum heat input less than 50,000,000 Btu/hour. The Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (40 CFR 60 Subpart Dc) do not apply for this boiler because the maximum design capacity of the boiler is less than 10 MMBtu/hour. In addition, this boiler does not appear to be subject to the National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (40 CFR 63 Subpart JJJJJ) per 40 CFR 63.11195(e) because it is a gas-fired boiler.

WATER WATER TREATMENT

The wastewater treatment system I observed at Cintas appears to be exempt from the requirement in Rule 201 to have a PTI per Rule 285(2)(m).

PTI 84-18

PTI 84-18 was issued to Cintas Corporation October 19, 2018. This permit contains facility-wide VOC and HAP opt-out emission limits.

The inspection indicated the following with respect to the facility's compliance with PTI 84-18:

FGFACILITY

This flexible group applies to all equipment source-wide that emit HAPs and/or VOCs including equipment covered by other permits, grand-fathered equipment, and exempt equipment. VOC and HAP emitting equipment/processes at Cintas includes eight washing machines, four dryers, waste-water treatment, one boiler, and several space heaters.

Emission Limits

The following emission limits are set forth in PTI 84-18 for FGFACILITY:

Pollutant	Limit	Time Period / Operating Scenario
1. VOC	Less than 89.9 tpy	12-month rolling time period as determined at the end of each calendar month
2. Individual HAP	Less than 8.9 tpy	12-month rolling time period as determined at the end of each calendar month
3. Aggregate HAPs	Less than 22.4 tpy	12-month rolling time period as determined at the end of each calendar month

According to PTI 84-18, compliance with the emission limits is demonstrated through records of individual HAP, aggregate HAP, and VOC emission calculations in tons per calendar month and in tons per 12-month rolling time period as determined at the end of each calendar month.

HAP and VOC emissions from combustion sources (dryers, boiler, etc) should be calculated using AP-42 or an alternative method acceptable to the AQD District Supervisor per PTI 84-18.

For shop towel laundering, HAP and VOC emission factors in Appendix A of PTI 84-18 may be used, or an

alternate emission factor approved by the AQD District Supervisor. The emission factors in Appendix A were established through stack testing conducted by Cintas at a similar facility in the U.S. and are based on the weight of soiled shop towels laundered.

At the Madison Heights facility I only observed clean and soiled uniforms, floor mats, wet and drop mops, and shop towels. I did not see or smell any other types of materials likely to contain HAPs or VOCs such as towels used in the furniture industry (furniture towels) or printing industry (print towels). Mr. Drzewiecki explained that the facility does not accept any furniture or print towels.

The textiles in the receiving area were sorted and stored in individual containers. I observed a scale which Mr. Logan explained is used to weigh soiled products prior to washing. The weight and material type of the products entering the facility for laundering is input into a computer system.

Mr. Logan provided monthly and 12-month rolling records (Attachment 4) and spreadsheets of the HAP and VOC emissions from all processes at the facility that emit HAPs and VOCs for June 2018 through February 2019. I verified the emission factors used in the spreadsheet are the emission factors stated in PTI 84-18, Appendix A, and AP-42. Cintas began calculating HAP and VOC emissions in June 2018. The highest rolling total of individual HAP emissions reported for June 2018 through February 2019 was 0.05 tons of tetrachlorethylene in January and February 2019. The greatest rolling aggregate HAP emissions reported for June 2018 through February 2019 was 0.15 tons reported in February 2019. The highest rolling VOC emissions reported for June 2018 through February 2019 was 2.12 tons reported in February 2019. At this time, the reported rolling HAP and VOC emissions cannot be used to determine compliance with the 12-month rolling emission limits because they only include 9 months of emissions data, not 12.

Material Limits

The following material limits are set forth in PTI 84-18 for FGFACILITY:

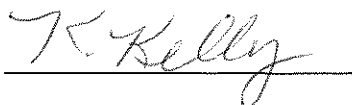
Material	Limit	Time Period / Operating Scenario
Soiled shop towels laundered	22,000,000 pounds per year	12-month rolling time period as determined at the end of each calendar month
All textiles laundered	73,000,000 pounds per year	12-month rolling time period as determined at the end of each calendar month

As stated previously, soiled products are weighed as they enter the receiving area of the facility and the soiled weight and material type is input into a computer system. Mr. Logan provided records of the pounds of soiled shop towels and all other textiles laundered for June 2018 through February 2019 (Attachment 4). The highest reported rolling amount of shop towels laundered was 221,890 pounds. The highest reported rolling amount of all textiles laundered was 8,795,945 pounds. At this time, the reported rolling amount of shop towels and all textiles laundered cannot be used to determine compliance with the 12-month rolling material limits because they only include 9 months of throughput data, not 12.

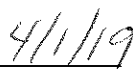
CONCLUSION

Based on information gathered during this inspection and belief formed after reasonable inquiry, Cintas Corporation appears to be in compliance with the conditions of PTI 84-18 and all other applicable air regulations evaluated.

NAME



DATE



SUPERVISOR

